Access and Benefit Sharing / Convention on Biological Diversity:

Implications for Microbial Biological Control

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Continuing Challenges to the Practice of Biological Control

- Scientific
- Regulatory / Administrative
  - * Shippers Procedures (Security, Liability)
  - * Import/Export (Legal Aspects, Biosecurity Regulations)
  - * Evolution of U.S. Regulatory & Permitting Procedures
  - * International Protocols
    - - Trade in Threatened / Endangered Species (CITES)
    - - Biodiversity Conservation and Utilization

- Countries are becoming more protective about collecting in natural areas (requiring permits or banning collecting entirely)
- Countries increasingly consider natural enemies as valuable natural resources to be protected from exploitation

- Obtaining permits and quarantine certificates is often complex.
- Shippers may refuse to ship pathogens, insects, icepacks, alcohol.
- Exporting/importing pathogens in a post-9/11 world is increasingly tightly regulated.

the Convention on Biological Diversity

the international Convention on Biological Diversity (CBD) entered into force on 29 December 1993, following the "Earth Summit" in Rio de Janeiro. CBD is administered by the United Nations Environment Program (UNEP) with its HQ in Montreal.

CBD has 3 main objectives:

- Conservation of biological diversity
- Sustainable use of the components of biological diversity
- Fair and equitable sharing of the benefits arising out of the utilization of genetic resources

A brief CBD history:

* U.S. was extensively involved in drafting & negotiating phases
* CBD has been signed by 193 parties, but the U.S. is not a signatory; Pres. GHW Bush declined to sign the Convention in 1992.
* In 1993, the Convention was signed by Pres. Clinton, but failed to receive a ratification vote by the full Senate. The Senate has not revisited the Convention since then.
* U.S. participates in all CBD meetings as an interested "observer"

The Conference of Parties (COP) is the governing body of CBD. Delegates to COP meetings deal with various aspects of CBD themes.

CBD "Cross-Cutting" Issues

The COP also works on cross-cutting issues relevant to all CBD thematic areas. These provide links between the thematic programs.

Some cross cutting initiatives directly support work under thematic programs, e.g., the Global Taxonomy Initiative provides support for a broad range of information on status and trends of biodiversity.

The work done for these cross-cutting issues leads to a number of principles, guidelines, and other tools to facilitate the implementation of the Convention and the achievement of the 2010 biodiversity target.

Examples:

Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits Arising from their Utilization

International Treaty on Plant Genetic Resources for Food and Agriculture

Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising Out of Their Utilization

Cross-Cutting Issues

2010 Biodiversity Target
Access to Genetic Resources and Benefit-sharing
Biodiversity for Development
Climate Change and Biodiversity
Communication, Education and Public Awareness
Economics, Trade and Incentive Measures
Ecosystem Approach to Biodiversity
Gender and Biodiversity
Global Strategy for Plant Conservation
Global Taxonomy Initiative
Impact Assessment
Identification, Monitoring, Indicators and Assessments
Invasive Alien Species
Liability and Redress
Protected Areas
Sustainable Use of Biodiversity
Technology Transfer and Cooperation
Tourism and Biodiversity
Traditional Knowledge, Innovations and Practices

Invasive Alien Species

"Alien species that become invasive are considered to be a main direct driver of biodiversity loss across the globe. In addition, alien species have been estimated to cost our economies hundreds of billions of dollars each year.

The Global Invasive Species Program (GISP) has been designated as an international thematic focal point for invasive alien species under the clearing-house mechanism of the Convention."

Global Taxonomy Initiative

"Conservation and management of biodiversity depends our understanding of taxonomy. Inadequate taxonomic information and infrastructure, coupled with declining taxonomic expertise, hinders our ability to make informed decisions about conservation, sustainable use and sharing of the benefits derived from genetic resources.

Governments, through the Convention on Biological Diversity, have acknowledged the existence of a "taxonomic impediment" to the sound management of biodiversity, and have developed the Global Taxonomic Initiative to remove or reduce the impediment."

Access and Benefit-sharing

"The Convention on Biological Diversity recognizes the sovereign rights of States over natural resources in areas within their borders. Parties to the Convention have the authority to determine access to genetic resources in areas within their jurisdiction.

Parties also have the obligation to take appropriate measures with the aim of sharing the benefits derived from their use. This is one of the three fundamental objectives of the Convention."

The CBD is an international framework convention, and its provisions are binding on its contracting parties. However, it is unable to prescribe how decisions are to be implemented by the parties since different countries have different legal structures.

As the CBD definition also includes the potential value of such resources, in effect all genetic material falls under the provisions of the ABS system. The CBD was required to prepare a global ABS regime for consideration and agreement at COP-10 in 2010, and this will include all biological control agents.

The practice of BC will need to comply with whatever ABS regime is agreed by COP-10 in 2010.

ABS concerns regarding inherent rights:

- Establish mechanisms for protecting rights to benefits from natural resources

- Share in benefits from bioprospecting & traditional uses
  - biopharmaceuticals
  - crop & animal varieties/genetic diversity
  - bioinformatics of indigenous resources

- Reduce biopiracy

Related concerns of sovereign countries:

- Involvement of local expertise in scientific research involving their resources

- Documentation of new species, taxonomic revisions, ecological studies, beneficial uses, etc.

- Irresponsible use of their biodiversity (unauthorized export of potentially problematic species – invasives, diseases, rare & endangered species, etc.)

Concerns for Biological Control Practice under ABS

- Many resource providers have not considered, or are unaware, of BC in the context of ABS

- Multilateral free exchange of BC agents may be restricted by new ABS legislation:
  - increased delays in obtaining permits
  - navigation of new agencies and regulations will become more difficult
  - more expensive to conduct basic research and obtain agents

- Other scientific research domains have similar concerns; e.g., taxonomy & systematics, plant & animal breeding

Classical biological control is based on government and donor financing to create a free-of-charge public good.

There is no mechanism to collect monetary benefits from the beneficiaries.

…in this case, forms of non-monetary benefit sharing based on shared research activities and capacity building are appropriate.

(*from: Biocontrol News and Information 30(4), 67N–87N*)

Augmentative biological control generates modest commercial profits. Larger augmentative biological control producers, such as members of IBMA and ANBP, are willing to consider benefit sharing in the form of knowledge sharing, training, provision of natural enemies, and other ways.

If a natural enemy obtained from a source country becomes commercially successful, some producers foresee that payment of 'royalties' to the country of origin might be possible, but if the industry had to pay for each natural enemy collected, they would likely not being able to continue this type of work.

On balance, these producers believe that shared activities and capacity building is a more realistic approach given the relatively small profits and profit margins in the augmentative biological control industry.

(*from: Biocontrol News and Information 30(4), 67N–87N*)

What stance has the BC community taken?

- IOBC:
  -- prepared a report for FAO on Use & Exchange of BC Agents for agricultural purposes
  -- sent observers to COP meetings
  -- wrote opinions to publicize the issue:
    -- Nature, BioControl, BC News & Information

- Commercial BC Producer Groups (IBMA, ANBP):
  -- sent observers to COP meetings

- US federal agencies involved in BC:
  -- provided input to US State Dept COP observers

IOBC recommendations on ABS:

1. Governments should support the existing multilateral practice of free exchange of natural enemies for BC.

2. ABS regulations should support the BC sector by facilitating the multilateral exchange of BCAs.

3. Countries are encouraged to have a single point of contact for advice on compliance with ABS regulations and to facilitate surveys, collections and taxonomic support.

4. ABS in relation to BC should be based on non-financial benefit sharing, e.g. capacity building, shared research and/or technology transfer.

5. Best practices for ABS in relation to BC should be prepared and disseminated. BC organizations would be expected to follow these guidelines.

6. Free access to database information on BC agents should be supported.

IOBC statement to members:

"We urge BC leaders in each country to join forces and get in touch with the ABS contact point for their country as soon as possible, and raise the issues surrounding the practice of BC and ABS, using local examples when appropriate, so their national delegates to the ABS discussions in 2010 are appropriately informed.

Only if the BC community of practice gets involved in the discussions now, can they expect their needs to be taken into consideration."

Implications for microbial control:

- Considerations about ABS have dwelt largely on arthropod agents, not microbials.

- ABS procedures for microbials may be different than for insects/animals/plants (greater complexity, more agencies involved, etc.)

- Microbial agents more likely to be considered as potential commercial products & thus more tightly controlled (or subject to monetary charges)

- Permission for export of prospective surveys / collections containing (initially) unidentified agents may be difficult to obtain.

10th Conference of the Parties to the Convention on Biological Diversity
Nagoya, Japan, 18-29 October 2010

"...(COP) adopts the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity"

"...each Party shall make available to the Access and Benefit-sharing Clearing-House any information required by this Protocol, as well as information required pursuant to the decisions taken by the Conference of the Parties serving as the meeting of the Parties to this Protocol. The information shall include:

(a) Legislative, administrative and policy measures on access and benefit-sharing;

(b) Information on the national focal point and competent national authority(ies); and

(c) Permits or their equivalent issued at the time of access as evidence of the decision to grant prior informed consent and of the establishment of mutually agreed terms."

MONETARY BENEFITS

- Access fees/fee per sample collected or otherwise acquired;
- Up-front payments
- Milestone payments
- Payment of royalties
- Licence fees in case of commercialization
- Special fees to be paid to trust funds supporting conservation and sustainable use of biodiversity
- Salaries and preferential terms
- Research funding
- Joint ventures
- Joint ownership of relevant intellectual property rights

NON-MONETARY BENEFITS

- Sharing of research and development results
- Collaboration & cooperation in scientific research and development programs, particularly biotechnological research
- Participation in product development
- Collaboration & cooperation in education and training
- Admittance to *ex situ* facilities of genetic resources and to databases
- Transfer of knowledge and technology that make use of genetic resources, including biotechnology
- Strengthening capacities for technology transfer
- Institutional capacity-building
- Resources to strengthen the administration and enforcement of access regulations
- Training related to genetic resources with the full participation of countries providing genetic resources,
- Information on conservation and sustainable use of biological diversity, e.g., biological inventories & taxonomic studies
- Contributions to the local economy
- Research on priority needs, such as health and food security, taking into account domestic uses of genetic resources
- Institutional and professional relationships
- Food and livelihood security benefits
- Social recognition

What should you as a BC researcher do about ABS?

- Educate & inform your partners/cooperators/interested commodity or industry groups about the potential for ABS to impact BC research and implementation

- Report cases of ABS impact to your own programs

  - agency administrators (e.g., National Program Staff)
  - Kim Hoelmer (kim.hoelmer@ars.usda.gov)
  - Bob Nowierski (rnowierski@nifa.usda.gov)

- Communicate your concerns and ideas!

Additional Background Information:

Cock M. 2010. Biopiracy rules should not block biological control. Nature 467: 369.

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